



NIOSH 2013 Pesticide Handler Personal Protective Technology Stakeholders Meeting

Using Video 'Stories' to Motivate Correct Personal Protective Equipment (PPE) Practices

March 25-26, 2013
Washington DC



Agenda

NIOSH 2013 Pesticide Handler Personal Protective Technology Stakeholders Meeting

Motivating Best Personal Protective Equipment Practices

March 25-26, 2013

Mar. 25, 2013 (4:00PM-6:00PM ET) (Optional)

Mar. 26, 2013 (8:00AM-6:00PM ET) (Required)

NIOSH, Patriots Plaza 1, 395 E. Street, S.W., Room 9000, Washington, DC 20201

The NIOSH 2013 Pesticide Handler Personal Protective Technology (PPT) Stakeholders Meetings will focus on motivating pesticide handlers and pesticide workers in all industries to use best pesticide personal protective equipment (PPE) practices. This annual stakeholders meeting allows NIOSH to facilitate focused communications from key stakeholder groups from around the country on a key public health need. There is a first partial day on March 25th, 2013 (4-6 PM, ET) that is optional. This first day is open to everyone registered and includes informal introductions and discussions of partnering opportunities, as well as, on-going collaborations. On day two, March 26, 2013 (8AM – 6PM, ET), this is the public meeting. In the morning sessions, formal sessions will focus on potential health effects of pesticide exposure, work safety culture, and the use and limitations of storytelling to motivate safer and healthier work practices. Pesticide handlers and pesticide workers will also share their personal stories. The afternoon will be less formal. There will be an update from U.S. EPA. Also, selected stakeholders will showcase unique efforts to improve pesticide PPE practices. There will also be interactive sessions involving an expert panel, in which stakeholders will brainstorm on ways to collaboratively promote wide-spread adoption of best pesticide PPE work practices. The following diverse groups of stakeholders will be represented in the meetings: manufacturers, suppliers, educators, regulators, employee and employer advocates, employers and supervisors and pesticide handlers and workers. The meeting will accommodate 35-40 stakeholders in-person in Washington DC and 100 remote stakeholder locations around the country via ‘Live Meetings’.

Objectives:

1. Participants will learn how storytelling may be used to effectively motivate safer and healthier work practices:
 - a. to understand potential risks of pesticide exposure.
 - b. to understand the need to move beyond regulations and policies to protect handlers.
 - c. to determine the usefulness of video “stories” to motivate correct PPE practices.
 - d. to identify opportunities to partner in the use of video “stories” to motivate correct PPE practices.
2. Participants will learn about some key efforts to improve PPE practices from around the U.S.
3. NIOSH will obtain stakeholders’ input on strategies for future collaborative efforts to improve pesticide PPE practices
4. NIOSH will facilitate the development of enhanced national, regional, and local collaborations among project partners to improve pesticide PPE practices

Agenda, continued

March 25, 2013, 4:00– 6:00 PM (ET) [OPTIONAL]

4:00– 6:00 – Business Meeting and Program Updates

March 26, 2013, 8:00AM – 6:00 PM (ET) [REQUIRED]

8:00-8:10 – Welcome (M. D’Alessandro, PhD, NPPTL Director)

8:10-8:45 – Introduction (K. Faulkner, PhD, MPH, and C. Urban, NIOSH)

8:45-10:05 –Pesticides, Cancer, and Neurodegeneration (M. Alavanja, DrPH, National Cancer Institute, and X. Huang, MD, PhD, Hershey Medical Center/The Penn State University)

10:05-10:20 – Break

10:20-10:45 –Agricultural Safety Culture (R. Jester, P.E., University of Delaware, Cooperative Extension)

10:45-11:45 –Use of Storytelling to Motivate Safer Work Practices (E. Cullen, PhD, President, Prima Consulting Services)

11:45-1:15 – Lunch (on your own)

1:15–1:45 – US EPA and Worker Protection Standard Updates and Funding (K. Keaney, Chief, Pesticide Safety Programs, U.S. Environmental Protection Agency)

1:45 –3:00 –Innovative Methods of Improving PPE Practices [Thia Walker, MS, BSC, Colorado State University Extension, Michele Lea Proctor, MID, North Carolina Agrability Partnership- North Carolina Agromedicine, Robin Tutor-Marcom, MPH, NC Agromedicine Institute, Sandra L. Gonzalez De Del Pilar, MA, The Penn State University, Geoffrey Calvert, MD, MPH, NIOSH]

3:00-3:15 – Break

3:15-5:30 – [Using Video ‘Stories’ to Improve PPE] Motivating Handlers and Workers to Use Correct Pesticide PPE Practices* (M. Harrington, MPA, G. Hamilton, PhD, K. Faulkner, PhD), with Advisory Panel (M. Alavanja, DrPH, E. Cullen, PhD, X. Huang, MD, PhD, R. Jester, P.E., and K. Keaney)

*Objectives --

1. To determine the value of Video “Stories” for improving PPE practices
2. To determine which pesticide handlers will most likely benefit
3. To determine which types of Video “Stories” they need to hear
4. To determine how to effectively identify relevant stories.
5. To determine options to capture video footage on stories
6. To determine how to best disseminate Video “Stories”
7. To determine how to effectively quantify dissemination and impact of Video “Stories”

5:30-6:00 – Closing (K. Faulkner, PhD, MPH)

Innovative Methods of Improving PPE Practices: Abstracts

Inadequate personal protective equipment contributing to pesticide exposures causing acute illness

Geoffrey Calvert, MD, MPH, NIOSH

Background: Acute pesticide-related illnesses are preventable. Public health surveillance data are vital to understand the magnitude and causes of these illnesses, and to guide prevention activities. Failure to use appropriate personal protective equipment (PPE) is a frequent cause of acute pesticide-related illness.

Methods: Cases of acute pesticide-related illness and injury identified and investigated by agencies in 11 states participating in the SENSOR-Pesticides program and the California Department of Pesticide Regulation were reported to NIOSH. These reports were searched to identify disease-causing pesticide exposures likely produced by failure to use adequate PPE.

Results: Several cases were identified where failure to use adequate PPE contributed to the development of acute pesticide-related illness. Several of these cases will be described. One case involved a 57 y/o male pesticide applicator employed by an irrigation district who was exposed to acrolein that was leaking from his application equipment. The worker wasn't wearing a respirator when he investigated the leak. Almost immediately after exposure, the worker complained of throat tightness, difficulty breathing, inability to swallow, moderate phlegm production, and vomiting. He was admitted to the intensive care unit, developed right facial droop within 6 hours and ventricular fibrillation with grand mal seizure within 48 hours. Additional relevant cases involving failure to use adequate PPE were identified in a review of acute pesticide-related illnesses among farmworkers that occurred between 1998 and 2007. Among farmworkers, failure to use PPE was the third most common factor contributing to illness, and played a role in approximately 12% of illnesses. Finally, in a review of acute antimicrobial pesticide-related illnesses among workers in health-care facilities in 4 states between 2002 and 2007, ocular symptoms were the most commonly identified adverse health effect, usually from splashes while not wearing eye protection. These findings suggested the importance of using eye protection and the need to improve the design of product packaging and handling equipment to prevent splashes.

Conclusion: Examples were provided of workers who became ill because they failed to use appropriate PPE. These examples demonstrate that more work is needed to protect workers from pesticide hazards, including the need to ensure appropriate PPE use. Ensuring appropriate PPE use involves having the employer provide suitable PPE to the worker, educating the worker on the importance of using PPE, and training the worker on how to use PPE to its maximum advantage.

An Ethnography-Informed Mobile Health Intervention for Mexican Immigrant Farmworkers

By Sandra L. Gonzalez De Del Pilar, MA, The Penn State University

The development of tools and strategies to reduce pesticide exposures among farmworkers is critical. Yet, intervention efforts to date show only limited success in increasing self-protective behaviors. While the use of personal protective equipment (PPE) like gloves and eyewear are well-accepted as standard protective means to decrease exposure to pesticides by providing a barrier between pesticides and the skin (Fenske 1990, Gomes 1999, Salvatore 2008, Bradman 2009), our ethnographic evidence indicates that farmworkers find PPE difficult and impractical to use (Snipes 2009). Others agree. For example, an intervention by Strong et al. (2009) reports an increase in farmworkers' knowledge of pesticide risks, but no change in pesticide safety corresponding behaviors like using gloves and safety glasses. Other intervention efforts similarly report that the use of PPE is difficult to change (Vela Acosta 2005, Arcury 2009, Salvatore 2009, Strong 2009), and strongly recommend that the impractical function of PPE is a primary barrier that must be overcome to boost pesticide safety behaviors among farmworkers (Arcury 2001, Quandt 2001, Perry 2002, Snipes 2009).

We propose a novel pesticide safety intervention that will provide feasible PPE clothing alternatives for farmworkers. First, we will use a community-engagement approach, informed by the principles of community-based participatory research (CBPR) (Israel 2005) to work in mutual collaboration with our long-time community partner, Texas Migrant Council's (TMC) Migrant and Seasonal Head Start. Second, we will use key messages – informed by our ethnographic research – about pesticide safety that promotes use of innovative PPE. Messages have been

pretested for suitability by agricultural task, and cultural and linguistic appropriateness. Messages will be delivered using highly interactive materials such as photo novelas, videos and mobile devices (smart phones). We will report on our specific aims, which are:

1. To develop pesticide safety educational materials that promote increased use of novel forms of PPE. Educational materials were developed in collaboration with TMC, and were used to form interactive intervention educational materials. Materials for this study include culturally-relevant motivational text messages about pesticide safety delivered via mobile phones.
2. To evaluate the effectiveness of intervention delivery strategy (tailored, highly interactive text messages on mobile smart phones) to increase farmworkers' use of novel PPE. Testing of intervention strategies are currently being tested in a pilot feasibility structure, delivered to migrant and seasonal farmworkers. The intervention items are being tested among 30 English-speaking and 30 Spanish-speaking workers to assess delivery of items in the two primary languages of migrant and seasonal agricultural workers.

Designing Change: A Case Study- Implementing design process in improving PPE standards and compliance rates

By Michele L Proctor, Master of Industrial Design, North Carolina AgrAbility Partnership- North Carolina Agromedicine

Advancements in technology have taken the American farmer to new frontiers, but also to new levels of expectations. Increased awareness of farm safety and health risks have brought heightened attention to the need for change but also an equal balance in engineering, education and enforcement efforts for farmers. Reasons non-compliance in PPE use for farmers varies greatly, but can ultimately be boiled down to the psychosocial barriers associated with using PPE, stresses of agribusiness, and lack of choices suitable for the demands of the agricultural environment. In the form of a case study, this presentation will discuss many of these barriers and how implementing principles of design, will improve both the PPE technology available to farmers and change farmers' perspectives on PPE use, ultimately raising PPE use rates. This material will progress from a problem identification situation, interviews with farmers, understanding farmers' reasoning behind their decisions and ultimately a product designed to stand up to a farmer's daily needs as well as overcoming barriers. Design barriers and considerations will be discussed, including meeting the daily needs and specifics of the farming environment, cost concerns, comfort, level of education on the issues, personal image perspectives within the user group, best practices and care, product development, design team considerations and steps to entering PPE markets. The product design will illustrate use of styling, functionality and population understanding and awareness to improve PPE use.

Responding to New EPA Phase I Risk Management Measures Regulations for Fumigants: North Carolina's Mass Fumigant Safety/Respirator Training Initiative

By Robin Tutor-Marcom, MPH, NC Agromedicine Institute

The US Environmental Protection Agency (EPA) in 2010 issued Phase I of strict new regulations, Risk Mitigation Measures (RMM), designed to protect handlers and farmworkers who use soil fumigants. As an extension of services offered through its AgriSafe Network of North Carolina services, the North Carolina Agromedicine Institute ('the Institute') lead the effort to assist the more than 1300 farms across the state using soil fumigants to comply with the new regulations. Through its RMM project, the Institute facilitated training of more than 1400 individuals, and conducted medical clearance and respirator fit testing directly for more than 700 individuals. The project provided more than \$67,000 in cost share funds to assist farmers with purchase of respirators and cartridges. The project also facilitated medical clearance and fit tests for more than 1,000 additional individuals through other providers of these services. Special train-the-trainer sessions were held to ensure that all individuals providing information to farms were 'on the same page'. These individuals included Cooperative Extension agents, pesticide inspectors, and agronomists. Collaboration with state agencies, industry and community groups were instrumental in achieving project goals. The partnership with Cooperative Extension agents was particularly crucial to the success.

Significantly, working with its partners, the project successfully influenced the EPA to remove the requirement for farms to have a self-contained breathing apparatus on-site. . This will result in an approximate savings to NC farms of at least \$1.3 million. The NC's RMM Phase I project has been recognized nationally as the only project of its kind to assist farms with RMM implementation. The project also discovered significant health issues relating to respirator use: of the 700 individuals directly served, approximately two-thirds were found to be hypertensive and overweight/obese with another one-third found to have pulmonary obstructive disease. These conditions place individuals at risk for adverse health events associated with respirator use. While respirators protect from respiratory exposures, they also place additional stress on the heart and lungs as well as increasing risk for heat-related illness.

As NC farms are still learning how to adjust to the requirements of Phase I RMM, the EPA released plans for Phase II RMM regulations in December 2012. These regulations will require additional training and technical support for farms across the state as well as for the agencies that support them. The Institute, with the help of its partners, has begun a RMM Phase II program to respond to the new requirements and to continue assisting NC farms with the Phase I requirements.

Survey and Effectiveness of Pesticide Spray Equipment Cleanout

By Thia Walker, MS, Colorado State University/ Extension Specialist-Pesticide Safety Education

A number of problems arise each year from pesticide residues remaining in the pesticide application sprayer from previous applications. While there are many possible consequences of these residues, the most important are the risk to the applicator, especially during equipment cleanout and equipment maintenance/repair, and the risk to field workers. In 2011, the Colorado Department of Agriculture Pesticide Program collected tank samples from 10 airplanes and 1 helicopter attending a S.A.F.E. fly-in. These craft are used for pesticide applications and were cleaned by applicators prior to arriving at this event. Results from the tank sampling indicated residues from several pesticides are still detectable in most craft and included commonly used pesticides such as the herbicides 2,4-D and glyphosate, and the organophosphate insecticides chlorpyrifos and Dimethoate. These results prompted an investigation into the procedures used by applicators to clean spray equipment.

The project is a two part study; the first part is designed to survey licensed pesticide applicators to determine the factors that limit sprayer cleanout and procedures individual applicators use to clean the application sprayer, including whether Personal Protective Equipment (PPE) is worn during cleanout. A paper survey is being distributed to both Colorado licensed private and commercial applicators attending licensing recertification workshops. Through January 2013, 248 surveys have been completed with 16% of the respondents indicating they do not wear PPE during their cleanout procedures. This was an unexpected finding which needs to be addressed. The second part of the study is to analyze the effectiveness of individual applicator cleanout procedures by recruiting Colorado licensed pesticide applicators as volunteers, providing them with personal protective equipment for use while collecting samples during stages of their normal pesticide application equipment cleanout procedure, and analyzing the collected samples for pesticide residues.

The results of this study will be used to develop an Extension publication on effective methods for pesticide application equipment cleanout, including the necessity of wearing PPE during cleanout. This research can be applied nationwide to reduce inadvertent exposures to pesticide applicators and field workers from unexpected pesticide residues due to inadequate cleanout methods and educate them on the need for PPE during cleanout. Results will be presented to other PSEP coordinators at the National Pesticide Applicator Certification and Training (PACT) Workshop in Minneapolis, Minnesota in August 2013.

The project is funded by the High Intermountain Center for Agricultural Health and Safety (HICAHS) and is approved by the Colorado Department of Agriculture – Pesticide Program.

Participants (Onsite) and Presenters*

*Michael Alavanja, DrPH
Senior Investigator
National Cancer Institute
6120 Executive Blvd
North Bethesda, MD 20892
301-435-4720
alavanjm@mail.nih.gov

Teresa Andrews
Education and Outreach Coordinator
Western Center for Ag Health and Safety, UC
Davis
Old Davis Road South at CHE (Building
32792)
University of California
Davis, CA 95616
530.754.8678
teraandrews@ucdavis.edu

*Geoffrey Calvert, MD, MPH
Medical Officer
NIOSH/DSHEFS
5555 Ridge Avenue, MS R17
Cincinnati, OH 45213
513.841.4448
jac6@cdc.gov

Pietra Check, MPH
Health Communication Specialist
NIOSH/OD
395 E Street, SW, MS PO6
Washington, DC 20201
202.245.0660
gfe8@cdc.gov

*Elaine T. Cullen, PhD
President
Prima Consulting Services
4720 East Jim Hill Road
Chattaroy, WA 99003
509.238.6963
elainec@primaconsultingservices.com

*Maryann D'Alessandro, PhD
Director
NIOSH/NPPTL
PO Box 626
Pittsburgh, PA 15236
412.386.4033
bpjs@cdc.gov

*Sandra L. Gonzalez De Del Pilar, MA
BioQUAL Project Associate
Pennsylvania State University
Biobehavior Health Department
127 BBH Building
University Park, PA 16802
814.865.5020
Sig305@psu.edu

Elizabeth Evans
Environmental Protection Specialist
US Environmental Protection Agency
1200 Pennsylvania Ave, NW, Mail
Code 7506P
Washington DC 20460
703.305.7891
evans.elizabeth@epa.gov

Jeff Evans
Senior Scientist
US Environmental Protection Agency
1200 Pennsylvania Ave, NW Mail
Code 7509P
Washington DC 20460
703.305.7877
evans.jeff@epa.gov

*Kim Faulkner, PhD, MPH
Epidemiologist/Statistician
NIOSH/NPPTL
PO Box 626
Pittsburgh, PA 15236
412.386.6609
kfaulkner@cdc.gov

Todd Fiske
Outreach Coordinator
Northeast Center for Agricultural &
Occupational Health
1 Atwell Road
Cooperstown, NY 13326
800.343.7527 ext. 232
todd.fiske@bassett.org

Frank A. Gasperini
Executive VP/CEO
National Council of Agricultural
Employers
8233 Old Courthouse Road, Suite 200
Vienna, VA 22182
703.442.6517
frank@NCAEonline.org

Charlotte Halverson
Occupational Health Coordinator
AgriSafe Network, Inc.
988 Richards Road
Dubuque, IA 52003
563.590.7749
chalverson@agrisafe.org

*George Hamilton, PhD
Professor of Entomology and Chair
Extension Specialist in Pest
Management
Rutgers University, Department of
Entomology
93 Lipman Drive
New Brunswick, NJ 08901
848-932-9774
hamilton@AESOP.Rutgers.edu

*Marcy J. Harrington, MPA
Program Manager
[Pacific Northwest Agricultural Safety and
Health Center](#)
Box 357234
Seattle, WA 98195
206-685-8962, 1-800-330-0827
marcyw@uw.edu

Participants (Onsite) and Presenters*

<p>Dean Herzfeld, PhD Coordinator, Pesticide Safety & Environmental Education University of Minnesota Extension 495 Borlaug Hall 1991 Upper Buford Circle St. Paul, MN 55108 612.624.3477 deanh@umn.edu</p> <p>Kerry Hoffman-Richards, PhD Director, Pesticide Education Program Pennsylvania State University 221 Special Services Building University Park, PA 16802 814.880.0013 kmh14@psu.edu</p> <p>*Xuemei Huang, MD, PhD Director, Hershey Brain Analysis Research Laboratory for Neurodegenerative Disorders Penn State Milton S. Hershey Med. Center Department of Neurology 500 University Dr. H037 Hershey, PA 17033-1530 717.531.1530 Xuemei@psu.edu</p> <p>Jimo Ibrahim North Carolina A&T State University Coop Extension PO Box 21928 Greensboro, NC 27420-1928 336.334.7956 jimoi@ncat.edu</p> <p>*Ronald C. Jester, MS, PE University of Delaware 23221 Ross Street Station Road Seaford, DE 19973 302.841.3992 rcjester@udel.edu</p>	<p>*Kevin Keaney Chief of Pesticide Worker Safety Programs U.S. EPA 1200 Pennsylvania Ave. (7506P) Washington DC 20460 703.305.5557 keaney.kevin@epa.gov</p> <p>Ray McAllister Senior Director, Regulatory policy CropLife America 1156 15th Street, NW, Suite 400 Washington DC 20005 202.296.1585 rmcallister@croplifeamerica.org</p> <p>Roger Pocock Sales Representative GoatThroat Pumps 60 Shell Avenue Milford, CT 06460 212.255.6964 rnp@goatthroat.com</p> <p>*Michele Proctor, MID Project Coordinator North Carolina AgrAbility 127 D.S. Weaver Labs Box 7625, NCSU Raleigh, NC 27695 coordinator@ncagrability.com 828.302.5442</p> <p>Micah Raub Program Coordinator Virginia Dept. of Agriculture and Consumer Services PO Box 1163 Richmond, VA 23218 804.786.4845 micha.raub@vdacs.virginia.gov</p>	<p>Virginia Ruiz Director of Occupational and Environmental Health Farmworker Justice 1126 16th Street, NW, Suite 270 Washington DC 20036 202.293.5420 vruiz@farmworkerjustice.org</p> <p>Barbara Sheppard Office Automation Assistant NIOSH/NPPTL PO Box 626 Pittsburgh, PA 15236 412.386.6479 bgs3@cdc.gov</p> <p>Scott Shimmin Statistician USDA-NASS 1400 Independence Ave, SW, Room 6409 Washington DC 20250 202.690.3231 scott.shimmin@nass.usda.gov</p> <p>Daniel Taylor Chief Engineer - Product Safety and Compliance AGCO Corporation 202 Industrial Park Jackson, MN 56143 507-847-7372 daniel.taylor@AGCOcorp.com</p> <p>*Robin Tutor-Marcom, MPH East Carolina University NC Agromedicine Institute 1157 VOA Site C Road Greenville, NC 27834 252.744.1008 tutorr@ecu.edu</p>
---	--	---

Participants (Onsite) and Presenters*

<p>*Chuck Urban Audiovisual Production Specialist NIOSH/OD PO Box 626 Pittsburgh, PA 15236 412.386.6687 cau3@cdc.gov</p> <p>Roberto Quintero Velez Pesticide Trainer for the State of Virginia Telamon 5501 Patterson Avenue, Suite 102 Richmond, VA 23226 804.381.6081 rquinterovelez@telamon.org</p> <p>*Cynthia B. Walker, MS Extension Specialist, Pesticide Safety Education Colorado State University 1177 Campus Delivery Fort Collins, CO 80523-1177 970.491.6027 Thia.walker@coloradostate.edu</p>	<p>Robert L. Wegis Regulatory Compliance Manager Grimmway Enterprises Inc. PO Box 81498 Bakersfield, CA 93380 661.363.4732 rwegis@grimmway.com</p> <p>Nancy Westcott President GoatThroat Pumps 60 Shell Avenue Milford, CT 06460 212.255.6964 nwestcott@goatthroat.com</p> <p>Baldwin Williams Pesticide Inspector DC, Department of The Environment 1200 First Street 5th Fl. NE Washington DC 20002 201-535-2293 baldwin.williams@dc.bgov</p>	<p>Sherry Wyckoff Research Coordinator The New York Center for Agricultural Medicine and Health 1 Atwell Road Cooperstown, NY 13326 607.547.6023 swyckoff@nycamh.com</p>
--	---	---

Presenter Biographies (Abbreviated)

Alavanja – Dr. Michael Alavanja (DrPH) received a DrPH from the School of Public Health of Columbia University in Epidemiology and Environmental Health. Prior to joining the NCI, he served as an Assistant Professor of Environmental Health and Epidemiology at Hunter College, School of Health Sciences at the City University of New York and as an epidemiologist and section chief at the National Institute for Occupational Safety and Health. Dr. Alavanja is the author or co-author of over 210 peer reviewed papers on occupational and environmental epidemiology. Dr. Alavanja designed and initiated the Agricultural Health Study and leads the NCI research on the project.. Dr. Alavanja is an active volunteer for many community-based serve agencies in Maryland and is on the graduate faculty of Environmental Biology at Hood College in Frederick Maryland.

Calvert – Dr. Geoffrey Calvert (MD, MPH) has worked for the Centers for Disease Control and Prevention for the past 25 years, where he has been assigned to the National Institute for Occupational Safety and Health in Cincinnati, OH. He is also a volunteer associate professor at the University of Cincinnati, School of Medicine and the Wright State University School of Medicine. He has authored over 100 peer-reviewed scientific articles. In 2004, he was named the “Physician Researcher of the Year” by the US Public Health Service. Currently, he is primarily working on surveillance of acute occupational pesticide poisoning. He is also doing research on occupational cancer, lead poisoning, occupational hearing loss, and occupational causes of kidney disease. He is recognized internationally for his achievements in these areas.

Cullen –Elaine Cullen (PhD, MBA) has nearly 43 years experience working in safety and health for "high risk" industries such as mining, oil and gas, and commercial fishing. Her primary interest is the development of *effective* training for workers and first-line supervisors. Elaine retired from NIOSH in 2008 with over 38 years of public service, and is currently working as a health and safety consultant. She has a BA, MBA, and PhD from Gonzaga University, and is a graduate of the OPM Women's Executive Leadership program.

D'Alessandro – Maryann D'Alessandro (Ph.D.) has served as the Director of the National Institute for Occupational Safety and Health (NIOSH) National Personal Protective Technology Laboratory (NPPTL) since March 2012, and was previously the Associate Director for Science for NPPTL. Maryann provides leadership to the NIOSH PPT Cross Sector Program where she serves as the Manager leading the effort to align PPT initiatives with user needs across all workplace industry sectors. Within the Personal Protective Technology (PPT) Program, Maryann has served as the catalyst for aligning research, surveillance, policy and standards, and certification activities. Dr. D'Alessandro has been leading the effort to expand NIOSH's certification/oversight activity to all non-respiratory PPE. She also led the establishment of the National Academies Committee on Personal Protective Equipment for the Workforce (COPPE). The COPPE has generated six significant strategic outputs and increased national and international attention of NIOSH's role related to PPE. She has enhanced extramural research collaborations and fostered increased collaborations and partnerships to increase the understanding of PPE use and expectations in the workplace. Prior to joining NIOSH in 2003, she had a short academic career at the University of Pennsylvania's Department of Bioengineering, and also served 15 years with the U.S. Army in biomedical sensors, communications, and intelligence systems research and development. Maryann holds Electrical Engineering degrees from the Florida Institute of Technology (B.S.), Fairleigh Dickinson University (M.S.), and Georgia Institute of Technology (Ph.D.).

Presenter Biographies (Abbreviated), Cont.

Faulkner -- Kim Faulkner (PhD, MPH) is an epidemiologist and statistician in the National Institute of Occupational Safety and Health (NIOSH) Personal Protective Technology Laboratory. She is the project officer of the three-year old NIOSH National Personal Protective Equipment Surveillance and Intervention Project for Pesticide Handlers. Dr. Faulkner's work focuses on improving PPE practices. Major efforts includes developing and implementing the first comprehensive survey of PPE practices, barriers and motivators, meeting with diverse experts, and hosting the annual NIOSH Pesticide PPE Seminar Series. She founded and co-chairs the National Pesticide PPE Training Solutions Committee. Dr. Faulkner is often in the field. She has spoken informally with thousands of pesticide handlers about PPE practices over the past several years.

Gonzalez De Del Pilar -- Sandra Gonzalez De Del Pilar (MA, BA) is Project Manager of BioQUAL, a research laboratory at Penn State University devoted to exploring environmental health issues of Mexican immigrant farmworkers. The laboratory uses ethnographic research of the Principal Investigator, Dr. Shedra Amy Snipes, who travels with immigrant workers collecting narrative evidence as well as biospecimens. For the last two years. Mrs. Gonzalez De Del Pilar has managed the development and implementation of a highly innovative intervention designed to increase PPE use among farmworkers who live along the Texas/Mexico border. Mrs. Gonzalez De Del Pilar also has prior advocacy experience working with immigrant populations in Pennsylvania and California. Mrs. Gonzalez De Del Pilar received a BA in Legal Studies from Chapman University, and a MA in International Affairs from The Pennsylvania State University.

Hamilton -- Dr. George Hamilton (PhD) is an extension specialist with Rutgers Cooperative Extension and chair of the Department of Entomology at Rutgers University. His primary extension responsibilities are to coordinate New Jersey's Pesticide Safety Education and Integrated Pest Management Programs. He has been responsible for provide pesticide safety training for private and commercial applicators for 28 years. He is also co-executive producer of the award winning video "An American Farm Tale. Chronic Organophosphate Exposure and Treatment: The Rea Farm Case Study." This video is used by extension pesticide safety educators throughout the United States.

Harrington -- Marcy Harrington manages the NIOSH-funded Pacific Northwest Agricultural Safety and Health Center (PNASH) and has a special interest in participatory processes, evaluation and the translation and transfer of research. Having served the Center since 1997, Ms. Harrington has worked with the Northwest farming, fishing and forestry industries to identify regional stakeholder issues and priorities. Current educational and communication projects include: Pesticide Safety in Tree Fruit: Translating Research, and; Overcoming Barriers, Educational Video for Farmworker Ladder Safety and Heat Illness Prevention. Ms. Harrington also is the editor of the [Northwest Forest Worker Safety Update](#).

Huang -- Xuemei Huang (MD, PhD) is Vice Chair for Research in the Department of Neurology and Associate Professor of Neurology, Neurosurgery, Pharmacology, Radiology and Kinesiology, and director, Hershey Brain Analysis Research Laboratory for Neurodegenerative Disorders, Penn State, Hershey Medical Center, Hershey, PA. Dr. Huang's research is based on using structural and functional imaging (both magnetic resonance- and radioligand-based) to study neurodegenerative disorders. She is supported by two NIH R01 and one U01 grant that focus on Parkinson's disease and parkinsonism, both causes and treatment. Her research into relevant causative or protective factors has led to a focus on the effects of environmental exposure to toxicants that include welding fumes and pesticides. Since 2007, she has served as a consultant to the National Institute of Environmental Health Sciences.

Presenter Biographies (Abbreviated), Cont.

Jester – Ronald Jester (MS, PE) is currently Project Director for the Mid-Atlantic AgrAbility Project at the University of Delaware. He has 30 years experience as an Extension Safety Specialist and was an Adjunct Professor in the BioResource Engineering Dept. During his tenure in Extension his focus was in agricultural safety and he taught and provided leadership in the pesticide certification and training program. His areas of expertise include farm machinery safety, respiratory health, personal protective equipment, traffic safety and pesticide safety. Ron is currently an expert witness and safety consultant. He is past Executive Director of the Delmarva Safety Association, a 25 year member of ASSE, outreach educator for the NIOSH, Northeast Center and past President of the International Society for Agricultural Safety and Health. He received his BS in Agricultural Engineering from the University of Delaware and his MS in Industrial Engineering from Purdue University.

Keaney -- Kevin Keaney is chief of U.S. EPA's Pesticide Worker Safety Programs and the Pesticide Container / Containment Programs. He manages the national agricultural worker protection program, the national pesticide applicator certification program, and the national pesticide container / containment program. Also, he manages pesticide worker safety projects in Mexico, Central America and the Dominican Republic and implements an initiative to better prepare health care providers to recognize and manage pesticide poisonings. He has worked in a number of policy and management positions in EPA's Office of Pesticide Programs. Before working for EPA, he taught at universities in Pittsburgh and in Baltimore, directed a community action program in Virginia, and was a planner / economist for Washington's Metro subway development. He has undergraduate and graduate degrees in Economics and in English Literature, and has studied law.

Proctor – Michele Lea Proctor (MID) is the Project Coordinator for the North Carolina AgrAbility Partnership (NCAP) under North Carolina Agricultural and Technical State University (NCAT). She performs farm site assessments and works daily with farmers with disabilities across the state. Michele has a Master's Degree in Industrial Design from North Carolina State University, and Bachelors of Science degree in Human & Environmental Sciences from the University of North Carolina at Greensboro. Michele's Masters Thesis work was based on respiratory health in confined animal operations and the design of a respirator for agricultural use. She also serves as faculty advisor for North Carolina State Agricultural Engineering Senior Design teams developing assistive technology solutions for farmers with disabilities. Michele has worked in farm safety and health in North Carolina since 2007 through the North Carolina Agromedicine Institute and has spent her much of her life working directly with farmers and studying agricultural workplace factors. Michele grew up on a dairy and poultry farm in Western North Carolina and remains actively engaged in her family's farm and agricultural events around the state.

Tutor-Marcom -- Robin Tutor-Marcom (MPH) serves as Interim Director of the NC Agromedicine Institute. The Institute is an inter-institutional partnership among East Carolina, North Carolina Agricultural & Technical State, and North Carolina State Universities whose mission is to promote the health and safety of farmers, fishers, foresters, their workers, and families through research, prevention/intervention, and education/outreach. Robin blends her personal farm experience with her professional experiences in Occupational Therapy, public health, migrant/seasonal farmworker health, and agricultural safety and health to address the needs of individuals across North Carolina and beyond. She is pleased to serve as Project Manager of the AgriSafe Network of North Carolina as well as to share how the Network has served as a catalyst for helping farms with practical personal protective equipment solutions. Robin holds a Bachelor of Science in Occupational Therapy and Master of Public Health degree from East Carolina University. She is currently pursuing her doctorate in agricultural and extension education at North Carolina State University.

Presenter Biographies (Abbreviated), Cont.

Urban – Chuck Urban has been a Government employee for over 40 years (military/civilian). He has been a Video Production Specialist at National Institute for Occupational Safety and Health (NIOSH) for the last 32 years. Storyboarding, scripting, video camera operation (studio/on-location), and post-production editing are some of his duties related to Producing and Directing video projects for NIOSH.

Walker -- Thia Walker is an Extension Specialist for Pesticide Safety Education and has been Coordinator of the Colorado Environmental Pesticide Education Program (CEPEP) at Colorado State University since 2010. Prior to that, she was a research associate in the department of Bioagricultural Science & Pest Management at CSU where she studied pest and beneficial insects in dry land cropping systems. She is licensed as a Colorado Pesticide Applicator - Qualified Supervisor, and uses many of her experiences as an applicator in precertification and recertification training. In addition to applicator training, she is currently working with EPA R8 on Pollinator Protection, Colorado Department of Agriculture on Certification and Training materials for pesticide licensing, Worker Protection Train-the-Trainer for Workers and Handlers, and the High Intermountain Center for Agricultural Health and Safety (HICAHS) on effective pesticide spray equipment cleanout. She holds a BS in Biology and Chemistry from UW-Stevens Point and a MS in Plant Pathology from CSU.